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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,152	11/03/2003	Agustin Gonzales-Tuchmann	5854-00200	3829

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EXAMINER

KISS, ERIC B

ART UNIT	PAPER NUMBER
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2192

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,152	GONZALES-TUCHMANN ET AL.	
	Examiner	Art Unit	
	Eric B. Kiss	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/3/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20040322, 20050622</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 have been examined.

Specification

2. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

The use of trademarks, such as JAVA, has been noted in this application. Trademarks should be capitalized wherever they appear (capitalize each letter or accompany each trademark with an appropriate designation symbol, *e.g.*, TM or ®) and be accompanied by the generic terminology (use trademarks as adjectives modifying a descriptive noun).

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 5 contain the trademark/trade name JAVA. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte*

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Simpson, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a particular programming language and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 14-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory).

Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. *See, e.g., In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, *i.e.*, the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035.

Claims 14-20 recite a "system" and an "environment" comprising a series of elements that can be reasonably interpreted as software, *per se*. The claims do not define any structural and functional interrelationships between the software elements and a computer that would

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permit the described functionality to be realized when the software is employed as a computer component. Accordingly, claims 14-20 appear to merely set forth functional descriptive material *per se*, which is nonstatutory.

7. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. §101 (non-statutory) above are further rejected as set forth below in anticipation of Applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, 6-14, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,874,141 (Swamy et al.).

As per claim 1, *Swamy et al.* discloses:

developing one or more data transformations using a host language (see, e.g., col. 2, line 58, through col. 3, line 7, describing the overall schema mapping);

assembling several data transformations having ports into a map component with links between ports using a declarative language for static assemblage and a host language for dynamic assemblage (see, e.g., Figs. 11-14 (illustrating example mappings with links));

compiling one or more map components with syntactic and semantic analysis (see, e.g., Fig. 1 (describing the overall compilation process); col. 6, lines 34-39); and

synthesizing the compiled map components into an executable dataflow application including removing the design time links between ports (see, e.g., Fig. 1, describing the overall compilation process; Fig. 10 (freeing the node dependencies memory)).

As per claim 2, *Swamy et al.* further discloses the steps of creating an executable dataflow application comprising:

synthesizing a hierarchical map component (see, e.g., Fig. 4A; Fig. 11);

flattening the hierarchical map component (see, e.g., col. 10, lines 4-12; Fig. 5C (. . . compiler link option is flattening . . .)); and

determining the executable dataflow application using the flattened hierarchical map component in conjunction with runtime properties (see, e.g., col. 10, lines 4-12; Fig. 5C (flattening); Fig. 1 (describing the overall compilation process)).

As per claim 6, *Swamy et al.* further discloses some of the map components comprising a plurality of other map components arranged hierarchically (see, e.g., Figs. 11-14 (illustrating example mappings with hierarchical components)).

As per claim 7, *Swamy et al.* further discloses some of the map components being static which consistently generate the same hierarchical map (see, e.g., Figs. 14 (illustrating an example mapping); col. 17, line 51, through col. 19, line 6 (illustrating direct copying of some mapped information from the source to the target)).

As per claim 8, *Swamy et al.* further discloses some of the map components being dynamic to generate different hierarchical maps dependent on properties and dynamic logic (see,

e.g., col. 14, line 29, through col. Col. 15, lines 52 (describing the application of mathematical logic to produce results dependent on the properties of the source data)).

As per claim 9, *Swamy et al.* further discloses the dynamic map components receiving information concerning properties, port types, and dataflow graph implementation and configuring its properties and internal dataflow graph implementation based on said received information (see, e.g., col. 15, lines 53-67).

As per claim 10, *Swamy et al.* further discloses one or more of the map components having interface and implementation properties (see, e.g., col. 15, lines 53-67).

As per claim 11, *Swamy et al.* further discloses some of the map components ports configured for sending data and some configured for receiving data (see, e.g., Fig. 11 (left and right side, respectively, of the individual mapping components)).

As per claim 12, *Swamy et al.* further discloses some of the ports being typed based on the type of data conveyed (see, e.g., Fig. 11 (the mathematical operations are designed to map numerical data)).

As per claim 13, *Swamy et al.* further discloses some of the ports being composite, comprising a plurality of hierarchical ports (see, e.g., Fig. 11 (multiple inputs/outputs to the mapping functions)).

As per claim 14, *Swamy et al.* discloses:

a library of components, some of the components being scalar and comprising a data transformation, some of the components being composite, and comprising a hierarchy of other components representing data transformations (see, e.g., Figs. 11-14 (illustrating example mappings with hierarchical components));

a compiler to develop and assemble components into a dataflow application linking components subject to schema and properties constraints (see, e.g., Fig. 1 (describing the overall compilation process); col. 6, lines 34-39);

an executor which executes the dataflow application in parallel (see, e.g., col. 6, lines 34-39); and

tools for accessing the functionality of the compiler, executor and component library (see, e.g., Figs. 1, 2, and 15).

As per claim 16, *Swamy et al.* discloses some of the components including ports for accepting and producing data whereby the map components are linked (see, e.g., the illustrated mappings of Figs. 11-14; Fig. 11 (left and right side, respectively, of the individual mapping components)).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,874,141 (*Swamy et al.*) in view of U.S. Patent No. 6,947,947 (*Block et al.*).

As per claims 3 and 15, although *Swamy et al.* fails to expressly disclose encrypting the dataflow graphs prior to the step of compiling the map component, *Block et al.* teaches the use of an encryption/decryption mechanism as part of a proprietary transformation (see, e.g., *Block et*

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al. at col. 6, line 44, through col. 7, line 13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such encrypted proprietary transformations as a means of securing the transfer of transformed data over a network such as the Internet (see, e.g., *Block et al.* at col. 6, line 44, through col. 7, line 13).

12. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,874,141 (Swamy et al.) in view of U.S. Patent No. 6,449,619 (Colliat et al.).

As per claim 17, *Swamy et al.* discloses:

A dataflow application development environment where map components are selected from a plurality of reusable map components each representing one or more data transformations (see, e.g., Figs. 11-14 (illustrating example mappings with hierarchical components)), the selected map components being visually assembled into a dataflow application (see, e.g., Figs. 11-14; col. 6, lines 34-39).

Swamy et al. fails to expressly disclose the recognition of patterns of parallelism and assigning of a number of threads to respective transformations. However, *Colliat et al.* teaches such multithreaded parallel transformation (see, e.g., *Colliat et al.* at col. 2, lines 43-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such parallel techniques as taught by *Colliat et al.* in order to gain the advantage of more efficient execution (see, e.g., *Colliat et al.* at col. 2, lines 43-62).

As per claim 18, *Swamy et al.* further discloses the map components defining properties affecting design behavior (see, e.g., col. 14, line 29, through col. Col. 15, lines 52 (describing the application of mathematical logic to produce results dependent on the properties of the source data)). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 19, *Swamy et al.* further discloses the map components defining properties affecting execution behavior (see, e.g., col. 14, line 29, through col. Col. 15, lines 52 (describing the application of mathematical logic to produce results dependent on the properties of the source data)). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 20, *Swamy et al.* further discloses the map components being assembled using ports for conveying data and declared as link points to other map components (see, e.g., Fig. 11 (left and right side, respectively, of the individual mapping components)). Therefore, for reasons stated above, such a claim also would have been obvious.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature should be directed to the TC 2100 Group receptionist: 571-272-2100.

A handwritten signature in black ink, appearing to read "Eric B. Kiss".

Eric B. Kiss
January 5, 2007